

AMENDMENTS TO THE CLAIMS

1. (Original) An image processing apparatus for trimming out a part of image data stored in a memory and transferring the trimming image data, the image processing apparatus comprising:

image data reading means for reading image data from a memory; and

controlling means for controlling the image data reading means that reads the image data from the memory,

wherein when a part of image data stored in the memory is trimmed, the controlling means is configured to control the image data reading means so as to read the image data for each column at a time from the memory.

2. (Original) The image processing apparatus as set forth in claim 1, wherein the controlling means is configured to supply address information that represents an address from which image data are read for one column and read width information that represents the horizontal size of one column and cause the data reading means to start reading the image data from the memory so as to control the image data reading means.

3. (Original) The image processing apparatus as set forth in claim 1, further comprising: a plurality of image data reading means connected to different buses, wherein the controlling means is configured to control each of the plurality of image data reading means.

4. (Original) The image processing apparatus as set forth in claim 3, wherein the specifications of an interface to the controlling means are in common with the plurality of image data reading means.

5. (Original) An image processing method for trimming out a part of image data stored in a memory and transferring the trimming image data, the image processing method comprising the step of:

when a part of image data stored in the memory is trimmed, reading the image data for each column at a time from the memory.

6. (Original) The image processing method as set forth in claim 5, wherein image data for one column are designated by an address from which the image data are read and read width information that represents the horizontal size of one column.

7. (New) An image processing apparatus for trimming an image portion from an original image stored in a memory and transferring the trimmed image portion, the image processing apparatus comprising:

at least one memory module;

at least one data reader, each data reader corresponding to a memory module; and

a controller for controlling the at least one data reader in response to a controller command from a processor to read the trimmed image portion,

wherein when the processor issues a controller command to retrieve the trim image portion from memory, the controller is configured to command the corresponding data reader to read only the trimmed image portions from the memory by reading one column at a time from the memory containing the original image.

8. (New) The image processing apparatus as set forth in claim 7, wherein the controller is configured to produce a plurality of address information, each address information including an address and read length, the address representing the beginning of a column of image data, and the read length representing the size of the column, and the controller causes a data reader to start reading the image form the memory using the address information.

9. (New) The image processing apparatus as set forth in claim 7, further comprising a plurality of data readers and memory modules, each data reader connected to a different bus, and wherein the controlling means is configured to control each of the plurality of data readers.

10. (New) The image processing apparatus as set forth in claim 9, wherein the different busses have different bit widths.

11. (New) The image processing apparatus as set forth in claim 9, wherein the controller commands are uniform for all the data readers, and the controller provides the readers with address information appropriate for each data reader.

12. (New) The image processing apparatus as set forth in claim 9, wherein the controller commands include the starting address, height, width of the trimmed portion of the image.

13. (New) An image processing method for reading a trimmed portion of an original image stored in a memory module and transferring the trimmed portion of the image, the image processing method comprising the step of:
issuing a controller command to a controller to read a trimmed portion of an image stored in a memory module;
determining the memory module containing the image;
converting the controller command to a plurality of memory module specific commands;
issuing the plurality of memory module specific commands to a memory reader associated with the memory module;
reading image data corresponding to only the trimmed image one column at a time from an untrimmed image in the memory module memory.

14. (New) The image processing method as set forth in claim 13,

wherein the plurality of memory module specific commands include an address from which the image data are read and read length that represents the size of a column.